

5 Enthymemes

Syllogistic arguments occur frequently, but their premises and conclusions are not always stated explicitly. Often only part of the argument is expressed, the rest being “understood.” Thus one may justify the conclusion that “Jones is a citizen” by mentioning only the one premise, “Jones is a native-born American.” As stated, the argument is incomplete, but the missing premise is easily supplied from knowledge of the Constitution of the United States. If the missing premise were stated, the completed argument would appear as

All native-born Americans are citizens.

Jones is a native-born American.

Therefore Jones is a citizen.

Stated in full, the argument is a categorical syllogism of form **AAA-1**, *Barbara*, and is perfectly valid. An argument that is stated incompletely, part being “understood” or only “in the mind,” is called an **enthymeme**. An incompletely stated argument is characterized as being *enthymematic*.

In everyday discourse, and even in science, many inferences are expressed enthymematically. The reason is easy to understand. A large body of propositions can be presumed to be common knowledge, and many speakers and writers save themselves trouble by not repeating well-known and perhaps trivially true propositions that their hearers or readers can perfectly well be expected to supply for themselves. Moreover, it is not at all unusual for an argument to be *rhetorically* more powerful and persuasive when stated enthymematically than when enunciated in complete detail. As Aristotle wrote in his *Rhetoric*, “Speeches that . . . rely on enthymemes excite the louder applause.”

Because an enthymeme is incomplete, its omitted parts must be taken into account when testing its validity. Without the missing premise, the inference is invalid. However, when the unexpressed premise is easily supplied, in all fairness it ought to be included as part of the argument when one is appraising it. In such a case, one assumes that the maker of the argument did have more in mind than was stated explicitly. In most cases there is no difficulty in supplying the tacit premise that the speaker (or writer) intended but did not express. Thus, for example, as he explains the solution to the mystery in “The Adventure of Silver Blaze,” Sherlock Holmes formulates an argument of which one critical premise is left unstated yet is very plainly supposed:

A dog was kept in the stalls, and yet, though someone had been in and fetched out a horse, the dog had not barked. . . . Obviously the visitor was someone whom the dog knew well.

We all understand very well what is tacit here, that the dog would have barked had the visitor been a stranger. In fairness to the author, Arthur Conan Doyle, that premise must be seen as part of Holmes’s argument.

In supplying a suppressed premise, a cardinal principle is that the proposition must be one that speakers can safely presume their hearers to accept as true. Thus it would be foolish to suggest taking the conclusion itself as a suppressed

Enthymeme

An argument that is stated incompletely, the unstated part of it being taken for granted. An enthymeme may be of the first, second, or third order, depending upon whether the unstated proposition is the major premise, the minor premise, or the conclusion of the argument.

premise, for if the arguer could have expected the auditors to accept that proposition as a premise, without proof, it would have been idle to present it to them as the conclusion of an argument.

Any kind of argument can be expressed enthymematically, but the kinds of enthymemes that have been most extensively studied are incompletely expressed syllogistic arguments. We confine our attention to these in the remainder of this section. Enthymemes traditionally have been divided into different *orders*, according to which part of the syllogism is left unexpressed. A **first-order enthymeme** is one in which the syllogism's major premise is not stated. The preceding example is of the first order. A **second-order enthymeme** is one in which only the major premise and the conclusion are stated, the minor premise being suppressed. An example of this type is "All students are opposed to the new regulations, so all sophomores are opposed to them." Here the minor premise is easily supplied, being the obviously true proposition, "All sophomores are students." A **third-order enthymeme** is one in which both premises are stated, but the conclusion is left unexpressed. An example of this type is the following:

Our ideas reach no farther than our experience: we have no experience of divine attributes and operations: I need not conclude my syllogism: you can draw the inference yourself.²

Two steps are involved in testing an enthymeme for validity: The first is to supply the missing part of the argument, the second is to test the resulting syllogism. Formulating the unstated proposition fairly may require sensitivity to the context and an understanding of the intentions of the speaker. Consider the following argument: "No true Christian is vain, but some churchgoers are vain." It is the conclusion that remains unstated, so this is plainly a third-order syllogism. What is the intended conclusion? If the speaker intends to imply only that "Some churchgoers are not true Christians," the argument is valid (**EIO-2**, *Festino*). However, if the speaker's intention is to establish that "Some true Christians are not churchgoers," the enthymeme is invalid (**IEO-2**), because in that case the fallacy of illicit process of the major term is committed.

Usually, the context indicates unambiguously what the unstated proposition is. For example, in a U.S. Supreme Court opinion in which federal legislation regulating intrastate violence motivated by gender (the Violence Against Women Act) was held unconstitutional, the critical argument of the majority was expressed thus:

Gender-motivated crimes of violence are not, in any sense of the phrase, economic activity. . . . Thus far in our nation's history our cases have upheld Commerce Clause regulation of intrastate activity only where that activity is economic in nature.³

The proposition that is understood but not stated in this argument is assuredly its conclusion: that gender-motivated crimes of violence may not be regulated by Congress under the long-existing precedent of Supreme Court cases.

To test this third-order enthymeme, we reformulate the argument so that its premises and (tacit) conclusion are in standard form. The major premise (the premise containing the predicate of the conclusion) is stated first; then mood and figure are identified:

First-order enthymeme

An incompletely stated syllogism in which the proposition that is taken for granted but not stated is the major premise.

Second-order enthymeme

An incompletely stated syllogism in which the proposition that is taken for granted but not stated is the minor premise.

Third-order enthymeme

An incompletely stated syllogism in which the proposition that is taken for granted but not stated is the conclusion.

Major premise: All activities that may be regulated by Congress under the precedent of Supreme Court cases are economic activities.

Minor premise: No intrastate gender-motivated crimes of violence are economic activities.

Conclusion (unstated but clearly indicated by the context): No intrastate gender-motivated crimes of violence are activities that may be regulated by Congress under the precedent of Supreme Court cases.

The mood of this syllogism is **AEE**; it is in the second figure because the middle term is the predicate of both premises. Its form is therefore *Camestres*, a valid syllogistic argument.

In some cases a third-order enthymeme may seem to be invalid without regard to context—for example, when both premises are negative, or when both premises are particular propositions, or when their common term is undistributed. In such cases, no syllogistic conclusion could follow validly, and hence such enthymemes are invalid in any context.

If it is one of the premises of the argument that is missing, it may be possible to make the argument valid only by adding a premise that is highly implausible—and pointing this out is certainly a legitimate criticism of an enthymematic argument. An even more crushing criticism, of course, would be to show that no additional premise, however implausible, can transform the enthymeme into a valid categorical syllogism.

The difference between enthymemes and normal syllogisms is essentially rhetorical, not logical. No new logical principles need be introduced in dealing with enthymemes, and they must be tested, ultimately, by the same methods that apply to standard-form categorical syllogisms.

EXERCISES

For each of the following enthymematic arguments:

- a. Formulate the plausible premise or conclusion, if any, that is missing but understood.
- b. Write the argument in standard form, including the missing premise or conclusion needed to make the completed argument valid—if possible—using parameters if necessary.
- c. Name the order of the enthymeme.
- d. If the argument is not valid even with the understood premise included, name the fallacy that it commits.

EXAMPLE

1. Transgenic animals are manmade and as such are patentable.

—Alan E. Smith, cited in *Genetic Engineering*
(San Diego, CA: Greenhaven Press, 1990)

SOLUTION

- a. The premise understood but not stated here is that whatever is man-made is patentable.
 - b. Standard-form translation:

All manmade things are patentable things.
All transgenic animals are manmade things.
 Therefore, all transgenic animals are patentable things.
 - c. The enthymeme is first-order, because the premise taken as understood is the major premise of the completed argument.
 - d. This is a valid syllogism of the form **AAA-1**, *Barbara*.
2. Abraham Beame. . . campaigned for mayor—as has been mentioned in recent weeks more often and with more irony than he might have wished—on the slogan “If you don’t know the buck, you don’t know the job—and Abe knows the buck.”

—*The New Yorker*, 26 August 1974
 3. Although these textbooks purport to be a universal guide to learning of great worth and importance—there is a single clue that points to another direction. In the six years I taught in city and country schools, no one ever stole a textbook.

—W. Ron Jones, *Changing Education*, Winter 1974
 4. As a matter of fact, man, like woman, is flesh, therefore passive, the plaything of his hormones and of the species, the restless prey of his desires.

—Simone de Beauvoir, *The Second Sex*, 1949
 - *5. You never lose respect for a man who is a vicious competitor, and you never hate a man you respect.

—Pancho Gonzalez, former U.S. tennis champion
 6. . . . I am an Idealist, since I believe that all that exists is spiritual.

—John McTaggart Ellis McTaggart, *Philosophical Studies*, 1922
 7. And why not become a perfect anthropomorphite? Why not assert the deity or deities to be corporeal, and to have eyes, a nose, mouth, ears, etc.? Epicurus maintained that no man had ever seen reason but in a human figure; therefore, the gods must have a human figure. And this argument, which is deservedly so much ridiculed by Cicero, becomes, according to you, solid and philosophical.

—David Hume, *Dialogues Concerning Natural Religion*, part V, 1779
 8. Small countries tend to remember history especially well, since it often turns out badly for them.

—Marc Falcoff, “Semper Fidel,” *The New Republic*, 3 July 1989
 9. It must have rained lately, because the fish just aren’t biting.

6 Sorites

Sometimes a single categorical syllogism will not suffice to account for our ability to draw a desired conclusion from a group of premises. Thus, from the premises

All diplomats are tactful.

Some government officials are diplomats.

All government officials are people in public life.

one cannot draw the conclusion

Some people in public life are tactful.

using a *single* syllogistic inference. Yet the indicated conclusion is entailed by the stated premises. To derive it requires two syllogisms rather than one. A stepwise process of argumentation must be resorted to, in which each step is a separate categorical syllogism. When stated explicitly, the required argument is

All diplomats are tactful individuals.

Some government officials are diplomats.

Therefore some government officials are tactful individuals.

All government officials are people in public life.

Therefore some people in public life are tactful individuals.

This argument is not a syllogism but a *chain* of categorical syllogisms, connected by the conclusion of the first, which is a premise of the second. This chain has only two links, but more extended arguments may consist of a greater number. Because a chain is no stronger than its weakest link, an argument of this type is valid if, and only if, all of its constituent syllogisms are valid.

Where such an argument is expressed enthymematically, with only the premises and the final conclusion stated, it is called a **sorites** (pronounced sō-rī-tēz—from the Greek, *soros*, meaning “heap or pile”; a sorites is a pile of syllogisms). Sorites may have three, four, or *any* number of premises. Some are very lengthy indeed. The following example is drawn from the *Monadology* of the philosopher Gottfried Leibniz:

Sorites

An argument whose conclusion is inferred from its premises by a *chain* of syllogistic inferences in which the conclusion of each inference serves as a premise for the next, and the conclusion of the last syllogism is the conclusion of the entire argument.

The human soul is a thing whose activity is thinking. A thing whose activity is thinking is one whose activity is immediately apprehended, and without any representation of parts therein. A thing whose activity is immediately apprehended without any representation of parts therein is a thing whose activity does not contain parts. A thing whose activity does not contain parts is one whose activity is not motion. A thing whose activity is not motion is not a body. What is not a body is not in space. What is not in space is insusceptible of motion. What is insusceptible of motion is indissoluble (for dissolution is a movement of parts). What is indissoluble is incorruptible. What is incorruptible is immortal. Therefore the human soul is immortal.

This sorites contains ten premises! Any sorites may be tested by making its intermediate conclusions or steps explicit, then testing separately the various categorical syllogisms thus obtained. If we ignore the possibility that an equivocation is present, then the validity of Leibniz's sorites is easily verified.

It is convenient to note here, in connection with the exercises at the end of this section, that a sorites is in standard form when all of its propositions are in standard form, when each term occurs exactly twice, and when every proposition (except the last) has a term in common with the proposition that immediately follows it. Thus one standard-form translation of Lewis Carroll's sorites

- (1) Everyone who is sane can do Logic.
 - (2) No lunatics are fit to serve on a jury.
 - (3) None of your sons can do Logic.
- Therefore none of your sons is fit to serve on a jury.

is

- (2') All persons fit to serve on a jury are sane persons.
 - (1') All sane persons are persons who can do Logic.
 - (3') No sons of yours are persons who can do Logic.
- Therefore no sons of yours are persons fit to serve on a jury.

One can test it by stating the suppressed subconclusion explicitly and then testing the resulting categorical syllogisms.

EXERCISES

A. Translate the propositions of the following sorites into standard form, and test the validity of each sorites.⁴

EXAMPLE

1. (1) Babies are illogical.
 - (2) Nobody is despised who can manage a crocodile.
 - (3) Illogical persons are despised.
- Therefore babies cannot manage crocodiles.

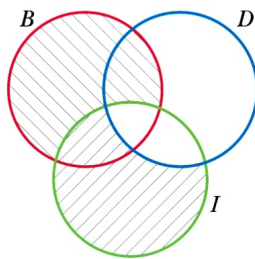
SOLUTION

Standard-form translation:

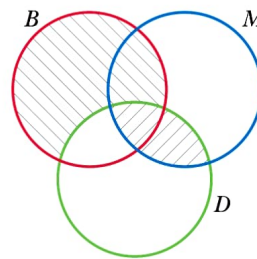
- (1') All babies are illogical persons.
 (3') All illogical persons are despised persons.
 (2') No persons who can manage crocodiles are despised persons.
 Therefore, no babies are persons who can manage crocodiles.

This sorites consists of two syllogisms, as follows:

All <i>I</i> is <i>D</i> .	No <i>M</i> is <i>D</i> .
All <i>B</i> is <i>I</i> .	All <i>B</i> is <i>D</i> .
Therefore all <i>B</i> is <i>D</i> .	Therefore no <i>B</i> is <i>M</i> .



Valid, Barbara



Valid, Cesare

2. (1) No experienced person is incompetent.
 (2) Jenkins is always blundering.
 (3) No competent person is always blundering.
 Therefore Jenkins is inexperienced.
3. (1) The only books in this library that I do not recommend for reading are unhealthy in tone.
 (2) The bound books are all well written.
 (3) All the romances are healthy in tone.
 (4) I do not recommend that you read any of the unbound books.
 Therefore all the romances in this library are well written.
4. (1) Only profound scholars can be dons at Oxford.
 (2) No insensitive souls are great lovers of music.
 (3) No one whose soul is not sensitive can be a Don Juan.
 (4) There are no profound scholars who are not great lovers of music.
 Therefore all Oxford dons are Don Juans.
- *5. (1) No interesting poems are unpopular among people of real taste.
 (2) No modern poetry is free from affectation.
 (3) All your poems are on the subject of soap bubbles.
 (4) No affected poetry is popular among people of real taste.
 (5) Only a modern poem would be on the subject of soap bubbles.
 Therefore all your poems are uninteresting.

7 Disjunctive and Hypothetical Syllogisms

Propositions are *categorical* when they affirm or deny the inclusion or exclusion of categories or classes. Syllogisms, arguments consisting of two premises and a conclusion, are called categorical when the propositions they contain are categorical. Up to this point our analysis has been of categorical syllogisms only. However, a syllogism may contain propositions that are not categorical. Such cases are not called categorical syllogisms but are instead named on the basis of the kind of propositions they contain. Here we look briefly at some other kinds of propositions and the syllogisms to which they give rise.

The categorical propositions with which we are familiar are *simple* in the sense that they have a single component, which affirms or denies some class relation. In contrast, some propositions are *compound*, in that they contain more than one component, each of which is itself some other proposition.

Consider first the *disjunctive* (or alternative) proposition. An example is “She was driven either by stupidity or by arrogance.” Its two components are “she was driven by stupidity” and “she was driven by arrogance.” The disjunctive proposition contains those two component propositions, which are called its *disjuncts*. The disjunctive proposition does not categorically affirm the truth of either one of its disjuncts, but says that at least one of them is true, allowing for the possibility that both may be true.

If we have a disjunction as one premise, and as another premise the denial or contradictory of one of its two disjuncts, then we can validly infer that the other disjunct in that disjunction is true. Any argument of this form is a valid **disjunctive syllogism**. A letter writer, critical of a woman nominated for high office by President George W. Bush, wrote:

In trying to cover up her own illegal alien peccadillo or stonewall her way out of it, she was driven either by stupidity or arrogance. She's obviously not stupid; her plight must result, then, from her arrogance.⁵

As we use the term in this section, not every disjunctive syllogism is valid. The argument

She was either arrogant or stupid.
She was arrogant.
Therefore she was not stupid.

is an example of what may be called an invalid disjunctive syllogism. We readily see that, even if the premises were true, she may have been arrogant *and* stupid. The truth of one disjunct of a disjunction does not imply the falsehood of the other disjunct, because both disjuncts of a disjunction can be true. We have a valid disjunctive syllogism, therefore, only where the categorical premise contradicts one disjunct of the disjunctive premise and the conclusion affirms the other disjunct of the disjunctive premise.

An objection might be raised at this point, based on such an argument as the following:

Either Smith is in New York or Smith is in Paris.
Smith is in New York.
Therefore Smith is not in Paris.

Here the categorical premise affirms one disjunct of the stated disjunction, and the conclusion contradicts the other disjunct, yet the conclusion seems to follow validly. Closer analysis shows, however, that the stated disjunction plays no role in the argument. The conclusion follows enthymematically from the second, categorical premise, with the unexpressed additional premise

Disjunctive Syllogism

A syllogism in which one of the premises is a disjunction, the other premise is the denial or the contradictory of one of the two disjuncts in the first premise, and the conclusion is the statement that the other disjunct in that first premise is true.

being the obviously true proposition that “Smith cannot be both in New York and in Paris,” which can be stated in disjunctive form as

Either Smith is not in New York or Smith is not in Paris.

When this tacit premise is supplied and the superfluous original disjunction is discarded, the resulting argument is easily seen to be a valid disjunctive syllogism. The apparent exception is not really an exception, and the objection is groundless.

The second kind of compound proposition we consider is the *conditional* (or *hypothetical*) proposition, an example of which is “If the first native is a politician, then the first native lies.” A conditional proposition contains two component propositions: The one following the “if” is the *antecedent*, and the one following the “then” is the *consequent*. A syllogism that contains conditional propositions exclusively is called a **pure hypothetical syllogism**; for example,

If the first native is a politician, then he lies.

If he lies, then he denies being a politician.

Therefore if the first native is a politician, then he denies being a politician.

In this argument it can be observed that the first premise and the conclusion have the same antecedent, that the second premise and the conclusion have the same consequent, and that the consequent of the first premise is the same as the antecedent of the second premise. It should be clear that any pure hypothetical syllogism whose premises and conclusion have their component parts so related is a valid argument.

A syllogism that has one conditional premise and one categorical premise is called a **mixed hypothetical syllogism**. Two valid forms of the mixed hypothetical syllogism have been given special names. The first is illustrated by

If the second native told the truth, then only one native is a politician.

The second native told the truth.

Therefore only one native is a politician.

Here the categorical premise affirms the antecedent of the conditional premise, and the conclusion affirms its consequent. Any argument of this form is valid and is said to be in the *affirmative mood* or ***modus ponens*** (from the Latin *ponere*, meaning “to affirm”). One must not confuse the valid form *modus ponens* with the clearly invalid form displayed by the following argument:

If Bacon wrote *Hamlet*, then Bacon was a great writer.

Bacon was a great writer.

Therefore Bacon wrote *Hamlet*.

This argument differs from *modus ponens* in that its categorical premise affirms the consequent, rather than the antecedent, of the conditional premise. Any argument of this form is said to commit the **fallacy of affirming the consequent**.

Pure hypothetical syllogism

A syllogism that contains only hypothetical propositions.

Mixed hypothetical syllogism

A syllogism that contains one conditional (or hypothetical) premise, and one categorical premise.

Modus ponens

A mixed hypothetical syllogism in which the first premise is a conditional proposition, the second premise affirms the antecedent of that conditional, and the conclusion affirms the consequent of that conditional.

Fallacy of affirming the consequent

A fallacy in which, from the truth of the consequent of a conditional proposition, the conclusion is reached that the antecedent of that conditional is true.

The other valid form of mixed hypothetical syllogism is illustrated by:

If the one-eyed prisoner saw two red hats, then he could tell the color of the hat on his own head.

The one-eyed prisoner could not tell the color of the hat on his own head.

Therefore the one-eyed prisoner did not see two red hats.

Here the categorical premise denies the consequent of the conditional premise, and the conclusion denies its antecedent. Any argument of this form is valid and is said to be in the form **modus tollens** (from the Latin *tollere*, meaning “to deny”). One must not confuse the valid form *modus tollens* with the clearly invalid form displayed by the following argument:

If Carl embezzled the college funds, then Carl is guilty of a felony.

Carl did not embezzle the college funds.

Therefore Carl is not guilty of a felony.

This argument differs from *modus tollens* in that its categorical premise denies the antecedent, rather than the consequent, of the conditional premise. Any argument of this form is said to commit the **fallacy of denying the antecedent**.

Modus tollens

A mixed hypothetical syllogism in which the first premise is a conditional proposition, the second premise is the denial of the consequent of that conditional, and the conclusion is the denial of the antecedent of that conditional.

Fallacy of denying the antecedent

A fallacy in which, from the negation of the antecedent of a conditional proposition, the conclusion is reached that the consequent of that conditional is false.

overview

Principal Kinds of Syllogisms

1. **Categorical syllogisms**, which contain only categorical propositions affirming or denying the inclusion or exclusion of categories. Example:

All *M* is *P*.

All *S* is *M*.

Therefore all *S* is *P*.

2. **Disjunctive syllogisms**, which contain a compound, disjunctive (or alternative) premise asserting the truth of at least one of two alternatives, and a premise that asserts the falsity of one of those alternatives. Example:

Either *P* is true or *Q* is true.

P is not true.

Therefore *Q* is true.

3. **Hypothetical syllogisms**, which contain one or more compound, hypothetical (or conditional) propositions, each affirming that if one of its components (the antecedent) is true then the other of its components (the consequent) is true. Two subtypes are distinguished:

A. Pure hypothetical syllogisms contain conditional propositions only.

Example:

If *P* is true, then *Q* is true.

If *Q* is true, then *R* is true.

Therefore if *P* is true, then *R* is true.

B. Mixed hypothetical syllogisms contain both a conditional premise and a categorical premise.

If the categorical premise affirms the truth of the antecedent of the conditional premise, and the consequent of that conditional premise is the conclusion of the argument, the form is valid and is called *modus ponens*.

Example:

If *P* is true, then *Q* is true.

P is true.

Therefore *Q* is true.

If the categorical premise affirms the falsity of the consequent of the conditional premise, and the falsity of the antecedent of that conditional premise is the conclusion of the argument, the form is valid and is called *modus tollens*. Example:

If *P* is true, then *Q* is true.

Q is false.

Therefore *P* is false.

EXERCISES

Identify the form of each of the following arguments and state whether the argument is valid or invalid:

EXAMPLE

1. If a man could not have done otherwise than he in fact did, then he is not responsible for his action. But if determinism is true, it is true of every action that the agent could not have done otherwise. Therefore, if determinism is true, no one is ever responsible for what he does.

—Winston Nesbit and Stewart Candlish, "Determinism and the Ability to Do Otherwise," *Mind*, July 1978

SOLUTION

This is a pure hypothetical syllogism. Valid.

2. Men, it is assumed, act in economic matters only in response to pecuniary compensation or to force. Force in the modern society is largely, although by no means completely, obsolete. So only pecuniary compensation remains of importance.

—John Kenneth Galbraith, *The New Industrial State* (Boston: Houghton Mifflin, 1967)

3. If each man had a definite set of rules of conduct by which he regulated his life he would be no better than a machine. But there are no such rules, so men cannot be machines.

—A. M. Turing, "Computing Machinery and Intelligence," *Mind*, volume 59, 1950

Dilemma

A common form of argument in ordinary discourse in which it is claimed that a choice must be made between two alternatives, both of which are (usually) bad.

8 The Dilemma

The **dilemma** is a common form of argument in ordinary language. It is, in essence, an argumentative device in which syllogisms on the same topic are combined, sometimes with devastating effect. Each of the constituent syllogisms may be quite ordinary, and therefore the dilemma is not of special importance from a

strictly logical point of view. The premises of the syllogisms so combined are formulated disjunctively, and devised in a way designed to trap the opponent by forcing him to accept one or the other of the disjuncts. Thus the opponent is forced to accept the truth of the conclusion of one or the other of the syllogisms combined. When this is done successfully, the dilemma can prove to be a powerful instrument of persuasion.

People often say somewhat loosely that a person is “in” a dilemma (or “impaled on the horns of a dilemma”) when that person must choose between two alternatives, both of which are bad or unpleasant. The dilemma is a form of argument intended to put one’s opponent in just that kind of position. In debate, one uses a dilemma to offer alternative positions to one’s adversary, from which a choice must be made, and then to prove that no matter which choice is made, the adversary is committed to an unacceptable conclusion.

The distinguished physicist Richard Feynman, recounting his experiences in the 1986 investigation of the catastrophic explosion of the *Challenger* space shuttle, was caustic in his criticism of mismanagement by administrators in the National Aeronautics and Space Administration (NASA). He said:

Every time we talked to higher-level managers, they kept saying they didn’t know anything about the problems below them. . . . Either the group at the top didn’t know, in which case they should have known, or they did know, in which case they were lying to us.⁶

An attack of this kind is designed to push the adversaries (in this case the NASA administrators) into a corner and there annihilate them. The only explicitly stated premise of the argument is a disjunction, but one of the disjuncts must obviously be true: Either they knew or they didn’t know about the problems below them. And whichever disjunct is chosen, the result for the adversary is very bad. The conclusion of a dilemma can itself be a disjunction (for example, “Either the NASA administrators did not know what they should have known, or they lied”) in which case we call the dilemma a **complex dilemma**. But the conclusion may also be a categorical proposition, in which case we call it a **simple dilemma**.

A dilemma need not always have an unpleasant conclusion. An example of one with a happy conclusion is provided by the following simple dilemma:

If the blest in heaven have no desires, they will be perfectly content; so they will be also if their desires are fully gratified; but either they will have no desires, or have them fully gratified; therefore they will be perfectly content.

The premises of a dilemma need not be stated in any special order; the disjunctive premise that offers the alternatives may either precede or follow the other. The consequences of those alternatives may be stated in a conjunctive proposition or in two separate propositions. An argument in dilemma form is often expressed enthymematically; that is, its conclusion generally is thought to be so obvious that it scarcely needs to be spelled out. This is well illustrated in a passage from a letter of President Abraham Lincoln, defending the Emancipation Proclamation that freed the slaves of the Confederacy:

Complex dilemma

An argument consisting of (a) a disjunction, (b) two conditional premises linked by a conjunction, and (c) a conclusion that is not a single categorical proposition (as in a simple dilemma) but a disjunction, a pair of (usually undesirable) alternatives.

Simple dilemma

An argument designed to push the adversary to choose between two alternatives, the (usually undesirable) conclusion in either case being a single categorical proposition.

But the proclamation, as law, either is valid, or is not valid. If it is not valid, it needs no retraction, If it is valid, it cannot be retracted, any more than the dead can be brought to life.⁷

Three ways of evading or refuting the conclusion of a dilemma have been given special names, two of them relating to the fact that a dilemma has two (or more) "horns." These three ways of defeating a dilemma are known as "going (or escaping) between the horns," "taking (or grasping) it by the horns," and "rebutting it by means of a counterdilemma." Note that these are not ways to prove the dilemma invalid; rather, they are ways in which one seeks to avoid its conclusion without challenging the formal validity of the argument.

One escapes between the horns of a dilemma by rejecting its disjunctive premise. This method is often the easiest way to evade the conclusion of a dilemma, for unless one half of the disjunction is the explicit contradictory of the other, the disjunction may very well be false. For example, one justification sometimes offered for giving grades to students is that recognizing good work will stimulate the students to study harder. Students may criticize this theory using the following dilemma:

If students are fond of learning, they need no stimulus, and if they dislike learning, no stimulus will be of any avail. But any student either is fond of learning or dislikes it.
Therefore a stimulus is either needless or of no avail.

This argument is formally valid, but one can evade its conclusion by *going between the horns*. The disjunctive premise is false, for students have all kinds of attitudes toward learning: Some may be fond of it, many dislike it, and many are indifferent. For that third group a stimulus may be both needed and of some avail. Going between the horns does not prove the conclusion to be false but shows merely that the argument does not provide adequate grounds for accepting that conclusion.

When the disjunctive premise is unassailable, as when the alternatives exhaust the possibilities, it is impossible to escape between the horns. Another method of evading the conclusion must be sought. One such method is to *grasp the dilemma by the horns*, which involves rejecting the premise that is a conjunction. To deny a conjunction, we need only deny one of its parts. When we grasp the dilemma by the horns, we attempt to show that at least one of the conditionals is false. The dilemma just above, attacking the use of grades in school, relies on the conditional "If students are fond of learning, they need no stimulus." The proponent of grading may grasp this dilemma by the horns and argue that even students who are fond of learning may sometimes need stimulus, and that the additional stimulus provided by grades promotes careful study by even the most diligent students. There may be good response to this, of course—but the original dilemma has been grasped firmly by the horns.

Rebutting a dilemma by means of a counterdilemma is the most ingenious method of all, but it is seldom cogent, for reasons that will appear presently. To rebut a given dilemma in this way, one constructs another dilemma whose conclusion is opposed to the conclusion of the original. *Any* counterdilemma may

be used in rebuttal, but ideally it should be built up out of the same ingredients (categorical propositions) that the original dilemma contained.

A classical example of this elegant kind of rebuttal concerns the legendary argument of an Athenian mother attempting to persuade her son not to enter politics:

If you say what is just, men will hate you; and if you say what is unjust, the gods will hate you; but you must either say the one or the other; therefore you will be hated.

Her son rebutted that dilemma with the following one:

If I say what is just, the gods will love me; and if I say what is unjust, men will love me. I must say either the one or the other. Therefore I shall be loved!

In public discussion, where the dilemma is one of the strongest weapons of controversy, the use of a rebuttal of this kind, which derives an opposite conclusion from almost the same premises, is a mark of great rhetorical skill. If we examine the dilemma and rebutting counterdilemma more closely, we see that their conclusions are not as opposed as they might at first have seemed.

The conclusion of the first dilemma is that the son will be hated (by men or by the gods), whereas that of the rebutting dilemma is that the son will be loved (by the gods or by men). However, these two conclusions are perfectly compatible. The rebutting counterdilemma serves merely to establish a conclusion different from that of the original. Both conclusions may very well be true together, so no refutation has been accomplished. But in the heat of controversy analysis is unwelcome, and if such a rebuttal occurred in a public debate, the average audience might agree that the rebuttal was an effective reply to the original argument.

That this sort of rebuttal does not refute the argument but only directs attention to a different aspect of the same situation is perhaps more clearly shown in the case of the following dilemma, advanced by an "optimist":

If I work, I earn money, and if I am idle, I enjoy myself. Either I work or I am idle. Therefore either I earn money or I enjoy myself.

A "pessimist" might offer the following counterdilemma:

If I work, I don't enjoy myself, and if I am idle, I don't earn money. Either I work or I am idle. Therefore either I don't earn money or I don't enjoy myself.

These conclusions represent merely different ways of viewing the same facts; they do not constitute a disagreement over what the facts are.

No discussion of dilemmas would be complete unless it mentioned the celebrated lawsuit between Protagoras and Euathlus. Protagoras, a teacher who lived in Greece during the fifth century BCE, specialized in teaching the art of pleading before juries. Euathlus wanted to become a lawyer, but not being able to pay the required tuition, he made an arrangement according to which Protagoras would teach him but not receive payment until Euathlus won his first case. When Euathlus finished his course of study, he delayed going into practice. Tired of waiting for his money, Protagoras brought suit against his former pupil for the tuition money that was owed. Unmindful of the adage that the lawyer

who tries his own case has a fool for a client, Euathlus decided to plead his own case in court. When the trial began, Protagoras presented his side of the case in a crushing dilemma:

If Euathlus loses this case, then he must pay me (by the judgment of the court); if he wins this case, then he must pay me (by the terms of the contract). He must either lose or win this case. Therefore Euathlus must pay me.

The situation looked bad for Euathlus, but he had learned well the art of rhetoric. He offered the court the following counterdilemma in rebuttal:

If I win this case, I shall not have to pay Protagoras (by the judgment of the court); if I lose this case, I shall not have to pay Protagoras (by the terms of the contract, for then I shall not yet have won my first case). I must either win or lose this case. Therefore I do not have to pay Protagoras!⁸

Had you been the judge, how would you have decided?

Note that the conclusion of Euathlus's rebutting dilemma is not compatible with the conclusion of Protagoras's original dilemma. One conclusion is the explicit denial of the other. However, it is rare that a counterdilemma stands in this relation to the dilemma against which it is directed. When it does, the premises involved are themselves inconsistent, and it is this implicit contradiction that the two dilemmas make explicit.

EXERCISES

Discuss the various arguments that might be offered to refute each of the following:

EXAMPLE

1. If we interfere with the publication of false and harmful doctrines, we shall be guilty of suppressing the liberties of others, whereas if we do not interfere with the publication of such doctrines, we run the risk of losing our own liberties. We must either interfere or not interfere with the publication of false and harmful doctrines. Hence we must either be guilty of suppressing the liberties of others or else run the risk of losing our own liberties.

SOLUTION

It is impossible to go between the horns. It is possible to grasp it by either horn, arguing either (a) that liberties do not properly include the right to publish false and harmful doctrines or (b) that we run no risk of losing our own liberties if we vigorously oppose false and harmful doctrines with true and helpful ones. It could plausibly be rebutted (but not refuted) by the use of its ingredients to prove that "we must either be guiltless of suppressing the liberties of others or else run no risk of losing our own liberties."

2. If you tell me what I already understand, you do not enlarge my understanding, whereas if you tell me something that I do not understand,